

ORDER

6600.30

**TRANSCEIVER REPLACEMENT PROJECT
(TRP)
PROJECT IMPLEMENTATION PLAN**



January 24, 1994

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

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Initiated By: **ANC-300**

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FOREWORD

This order provides technical guidance and management direction for the orderly implementation of the Transceiver Replacement Project equipment being purchased. The procedures and responsibilities in this order were developed using current agency directives. This order establishes program management and project implementation policy and responsibilities governing the activities of organizations. Management responsibility for this project has been assigned to the Air/Ground Communications and Control Program Manager, ANC-300, and, in particular, the Air/Ground Communications and Control Division, ANC-700. This order also identifies and describes specific events and activities to be accomplished. The format and content of this order are prepared as specified in FAA-STD-036, Preparation of Project Implementation Plans, and FAA Order 1320.1D, FAA Directives System.

Technical management support for this project has been assigned to the Associate Program Manager for Engineering, Air/Ground Communications and Control Division, ANC-700.



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CHAPTER 1. GENERAL

1. **PURPOSE.** This Federal Aviation Administration (FAA) order provides the Project Implementation Plan (PIP) for the Transceiver Replacement Project and presents overall technical guidance and management direction for the orderly procurement and installation of the Transceiver Replacement Project equipment. It identifies activities and schedules required to accomplish this implementation. The Transceiver Replacement Project is Capital Investment Plan (CIP) #44-07. Support and cooperation by other organizations are essential for successful implementation of the Transceiver Replacement Project equipment.

2. **DISTRIBUTION.** This order is distributed to division level in the National Airspace System (NAS) Program Management Service, Systems Management, Operational Support Service, NAS Transition and Implementation (Office of Systems Engineering and Program Management), Air Traffic Plans and Requirements, and the Offices of Personnel and Training and Higher Education in FAA Washington Headquarters; to branch level in the regional Airway Facilities and Air Traffic Divisions; to branch level in the FAA Academy and FAA Logistics Center (FAALC) at the Mike Monroney Aeronautical Center; to branch level in the Engineering, Test and Evaluation Service at the FAA Technical Center (FAATC); and a standard distribution to all Airway Facilities (AF) sectors, sector field offices, sector field units, and sector field office units and Air Traffic field offices.

3. **ACRONYMS AND ABBREVIATIONS.** The following abbreviations and acronyms are used in this order:

AAF-1	Associate Administrator Airway Facilities
AAF-11	Associate Administrator Airway Facilities, Planning Branch
ACW-300	Engineering, Integration, and Operational Evaluation Service, Navigation/Spectrum/Power System Division
AF	Airway Facilities
AHT-400	Office of Training and Higher Education, Airway Facilities Training Program Division
AMA-900	
AML-400	FAA Logistics Center, Engineering and Production Division
ANC-300	Program Director for Communications, Program Manager for Air/Ground Communications and Control
ANC-700	
ANS-420	NAS Transition and Implementation Service, NAILS Implementation Branch
APME	Associate Program Manager for Engineering
APML	Associate Program Manager for Logistics

AOS-200	National Airway System Engineering Division
ARTCC	Air Route Traffic Control Center
ASE-100	NAS Systems Engineering, Automation System Engineering Division
ASE-200	NAS Systems Engineering, Communications System Engineering Division
ASM-120	System Maintenance Service, Technical Standard Branch
ASM-200	System Maintenance Service, Maintenance Operations Division
ASM-300	System Maintenance Service, Telecommunications Management and Operations Division
ASM-500	System Maintenance Service, Spectrum Engineering Division
ASU-100	Contracting and Quality Assurance, Management, Plans and Evaluation Division
ASU-300	Contracting and Quality Assurance, Contracts Division
ASU-400	Contracting and Quality Assurance, Industrial Division
ATC	Air Traffic Control
ATCT	Airport Traffic Control Tower
ATQ-1	Office of the Director of Independent Operational Test and Evaluation Oversight
ATR-100	Air Traffic Plans and Requirements Service, Systems, Plans and Programs Division
CAI	Contractor Acceptance Inspection
CIP	Capital Investment Plan
CIT	Contractor Integration Testing
CW	Continuous Wave
COTS	Commercial-off-the-shelf
DRR	Deployment Readiness Review
FAA	Federal Aviation Administration
FAALC	FAA Logistics Center
FAATC	FAA Technical Center
IDIQ	Indefinite Delivery Indefinite Quantity
JAI	Joint Acceptance Inspection
LRU	Line Replaceable Unit
LSA	Logistics Support Analysis
LSAR	Logistics Support Analysis Record
NAS	National Airspace System
NAILS	National Airspace Integrated Logistic Support
NAS	National Airspace System
LSAR	Logistics Support Analysis Record
NAS	National Airspace System
NDI	NonDevelopmental Item
OCD	Operational Capabilities Demonstration
OCT	Operational Capabilities Test
OT&E	Operational Test and Evaluation
PIP	Project Implementation Plan

PTD	Provisioning Technical Documentation
RAPM	Regional Associate Program Manager
RFI	Radio Frequency Interference
TEMP	Test & Evaluation Master Plan
TRACON	Terminal Radar Approach Control

4. **AUTHORITY TO CHANGE THIS ORDER.** The Program Manager, Communications & Aircraft Acquisition, ANC-300, may issue changes to this order necessary to manage and implement the project which do not affect policy, delegate authority, or an assign responsibility.

5.-19. **RESERVED.**

CHAPTER 2. PROJECT OVERVIEW

20. **SYNOPSIS.** The Transceiver Replacement Project equipment being procured will be utilized to support the requirements for various Airport Traffic Control Towers (ATCT's) and Terminal Radar Approach Control (TRACON) facilities. The equipment procured will replace existing portable emergency transceivers that are vacuum-tube type, not supply supportable, are spectrally noisy, or do not meet current established requirements. The portable transceiver is used in case of abandonment of the facility or failure of primary and standby communications equipment.

21. **PURPOSE.** The Transceiver Replacement Project provides the necessary equipment to satisfy existing requirements for portable transceivers to support and modernize ATCT and TRACON equipment. This equipment will replace old, logistically insupportable equipment which does not meet spectrum engineering requirements for Radio Frequency Interference (RFI) reduction. The procurement will be for commercial-off-the-shelf (COTS) or nondevelopmental item (NDI) equipment configured to fit into existing facilities. The equipment will consist of a portable 5-watt dual-frequency band (VHF/UHF) multi-channel self-contained transceiver with battery configured to provide complete communications functionality. The Transceiver Replacement Project equipment will maximize the responsiveness to Air Traffic requirements during emergencies.

22. **HISTORY.** The Transceiver Replacement Project was started as the result of the regions asking for support in locating repair facilities for their emergency transceivers. When the FAA was unable to locate a repair facility, this project was initiated. The original concept was for procurement of portable transceivers which were self-contained, multipowered, 10-watt units. During a review of the transceiver requirements, a study was conducted to determine if a smaller, handheld transceiver would be acceptable. This concept was investigated by the FAATC through the testing of six handheld and portable transceivers by Air Traffic personnel. The results indicated that 5-watt portable units, but with more stringent specification for RFI reduction, would be acceptable. A working group was established, and a revised specification was developed to satisfy all concerned organizations.

23. **ACQUISITION STRATEGY.** Key aspects in the acquisition of the Transceiver Replacement Project equipment are as follows:

a. The FAA plans to utilize an Indefinite Delivery Indefinite Quantity (IDIQ) and Requirements-type contract to procure the transceiver equipment. In order to provide flexibility in meeting new CIP communications requirements through the 1990s, the contract will be issued for 5 years.

b. The Transceiver Replacement Project procurement will consist of NDI/COTS equipment which shall be compatible with the current Air Traffic requirements (FAA Order 6510.4A).

c. The equipment and services to be obtained will be ordered as needed and include:

(1) Equipment.

(a) VHF/UHF transceivers.

(b) Battery pack.

(c) Battery pack charger.

(d) Microphones.

(e) Antennas.

(2) Maintenance Support.

(a) Depot-level repair at contractor facility.

(b) Technical assistance.

(c) Procurement of spare parts.

(d) Reprocurement data package (for items no longer supported by the contractor).

(3) Training. The contractor may provide operations/maintenance training for FAA personnel if the option is exercised by the Government.

(4) Technical Support. Contractor-provided technical engineering and hardware support services.

d. Test Equipment. Test equipment is already available in the field and will be utilized for the transceiver equipment. All test equipment is currently supported by the FAALC.

24.-29. **RESERVED.**

CHAPTER 3. PROJECT DESCRIPTION

30. **FUNCTIONAL DESCRIPTION.** The Transceiver Replacement Project equipment will be self-contained, 100 percent solid-state, radio communications devices providing a means for ground-based air traffic controllers to send and receive radio transmissions. Each transceiver will be designed for multi-channel, dual-frequency range operation. It will have the capability of operating on all communications channels in the two frequency band(s). The two frequency band(s) covered by this equipment are 117.975-136.975 MHz (VHF) and 225.000-399.975 MHz (UHF), with 25 kHz channel spacing capability. The transceiver will provide a minimum of 5-watt radio frequency Continuous Wave (CW) carrier output.

31. **PHYSICAL DESCRIPTION.** The physical description of this equipment will be furnished after contract award. The equipment will be portable, contain a battery pack, and include an antenna and microphone. The battery pack charger will be either internal or external.

32. **SYSTEM REQUIREMENTS.** The system requirements are described below.

a. **Electrical Power.** The electrical power requirements for the Transceiver Replacement Project equipment are as follows:

(1) **Critical Power.** The Transceiver Replacement Project does not require critical power.

(2) **Essential Power.** The Transceiver Replacement Project equipment requires a maximum of 20 VA @ 120 VAC to operate a battery pack charger.

(3) **Battery Pack.** The transceiver is battery operated equipment using self-contained batteries with a capacity for minimum continuous operation of 30 minutes.

b. **Space.** The space requirements for the Transceiver Replacement Project equipment are dependent upon the limits established in the specification and the actual equipment dimensions. The estimated dimensions are 5.0 inches high, 12.0 inches wide, and 15.0 inches deep, excluding the antenna. The transceiver is to be provided with a hand-carry type handle.

c. **Weight.** The weight specified for the portable transceiver is not to exceed 20 pounds.

d. Environmental.

(1) Ambient Temperature. The Transceiver Replacement Project equipment will operate in an indoor ambient temperature between -10° C (Celsius) and +55° C.

(2) Relative Humidity.

(a) Attended Facilities. The humidity must be maintained between 10 and 80 percent.

(b) Unattended Facilities. The humidity must be maintained between 5 and 90 percent.

(3) Ventilation. Temperature control must be provided which allows for dissipation of the heat generated by the transceiver equipment. This equipment will not require external air conditioning or heating in order to operate.

33. INTERFACES. None.

34.-39. RESERVED.

CHAPTER 4. PROJECT SCHEDULE AND STATUS

40. **PROJECT SCHEDULES AND GENERAL STATUS.** The project schedule for the procurement process has been established.

41. **MILESTONE SCHEDULE SUMMARY.** The milestones for the project are presented below.

<u>Milestone</u>	<u>Date</u>
Procurement Request to Contracting & Quality Assurance, Management, Plans and Evaluation (ASU)	06/19/92
Solicitation Issued by ASU	11/15/93
Proposals Received	01/15/94
Technical Proposal Evaluation Completed	03/15/94
Cost Proposal Evaluation Completed	03/15/94
Operational Capabilities Test (OCT) Completed	03/15/94
Contract Award	06/30/94
Operational Test & Evaluation(OT&E) Testing Complete	10/25/94
Deployment Readiness Review (DRR)	01/05/95

42. **INTERDEPENDENCIES AND SEQUENCE.** As this project is primarily a replacement of existing equipment, there are no interdependencies with other contracts or events.

43.-49. **RESERVED.**

CHAPTER 5. PROJECT MANAGEMENT

50. PROJECT MANAGEMENT, GENERAL. The project management organizations at the FAA Washington headquarters and regions that will be responsible for the successful implementation of the transceiver equipment are presented in subparagraphs 50a-d. Their respective areas of responsibility during and after the implementation are described.

a. FAA Washington Headquarters Project Management.

(1) Program Manager for Air/Ground Communications and Control (ANC-300). ANC-300 has responsibility for the management of the Transceiver Replacement Project Program.

(2) Air/Ground Communications and Control Division (ANC-700). Support to ANC-300 is provided from within the Air/Ground Communications and Control Division (ANC-700) which serves as the Transceiver Replacement Project Manager and has overall management responsibility for the implementation.

(3) Transceiver Replacement Associate Program Manager for Engineering. A member of ANC-700 is designated as the Transceiver Replacement Project Assistant Program Manager Engineering (APME). The APME is responsible for acquisition and implementation of the transceiver equipment. The implementation responsibilities of the APME are to ensure that the transceiver equipment is ready for integration into the NAS, and that the FAA will be ready to receive, operate, and provide life-cycle support to the transceiver equipment when deployed.

(4) Contracting Officer (ASU-300). The contracting officer will convert the program requirements into contractual documents and perform contract management activities concerned with assuring that the terms of the contract are met. The contracting officer is the only person authorized to make changes that affect prices, deliverables, and/or schedules.

(5) Associate Program Manager for Logistics (APML) (ANS-420). The APML is responsible for ensuring that all National Airspace Integrated Logistics Support (NAILS) requirements are addressed in each procurement.

(6) Systems Plans and Programs Division (ATR-100). A representative from ATR-100 is responsible for ensuring Air Traffic requirements are met in this procurement

(7) System Engineering and Integration Contractor. The Systems Engineering and Integration Contractor provides schedules, Program Director Status Reports, and documentation.

(8) The Project Support Contractor. Responsibilities of the project support contractor are to:

- (a) Provide technical guidance and direction, to ANC-700.
- (b) Perform systems engineering and analysis.
- (c) Provide independent cost estimates.
- (d) Support the technical evaluation team.
- (e) Support Engineering, Integration, and Operational Evaluation Service, Navigational/Spectrum/Power Systems Division (ACW-300) in FAA integration testing as required.
- (f) Communicate program information and status.

b. Regional Project Management. The FAA Regions have each designated a Regional Associate Project Manager (RAPM) who is responsible for the planning and implementation of all phases of the Transceiver Replacement Project activities within the region. Responsibilities of the RAPM are to:

(1) Interface with the ANC-700 Transceiver Replacement Project APME on all implementation activities including the following major items:

- (a) Implementation planning.
- (b) Project funding.
- (c) Scheduling.
- (d) Testing.

(2) Coordinate with the regional divisions and facilities in matters pertaining to the Transceiver Replacement Project and be the focal point for:

- (a) Site configuration management.
- (b) Site preparation support.
- (c) Site survey support.
- (d) Transceiver Replacement Project equipment install support.
- (e) Site acceptance testing support.

(f) Update Configuration Management database.

(g) Update of regional documents.

(3) Interface with the AF sectors on all Transceiver Replacement Project implementation activities including the following major items:

(a) Hardware delivery.

(b) Installation.

(c) Integration and testing.

(d) System shakedown.

(e) Operational Readiness Demonstration.

(f) Equipment relocation/disposal.

(4) Provide implementation direction to regional AF technical representatives.

(5) Interface with the ANS-420 Transceiver Replacement Project APML on all implementation activities including the following major items:

(a) Integrated logistics support.

(b) Maintenance.

(c) Training.

c. Facility Project Management. An AF Sector representative will be assigned by the region and will have site responsibility for the management of the equipment installation. The AF Sector representative is responsible for coordination with the AF Director for the proper installation, integration, and acceptance testing at the site. The AF Sector representative will attend contractor training courses to the extent possible. The duties of the AF Sector representative are to:

(1) Ensure that site preparation activities are complete and acceptable prior to Transceiver Replacement Project equipment delivery.

(2) Assist with site surveys.

(3) Coordinate and schedule site personnel necessary to support or monitor the installation of Transceiver Replacement Project equipment and obtain site concurrence.

(4) Report any problems encountered during the installation and resolve those problems with the help of the ANC-700 APME as required.

(5) Ensure that all Transceiver Replacement Project hardware has been properly installed.

(6) Ensure that all required installation, integration, and acceptance testing have been completed satisfactorily.

(7) Sign-off on the delivery and successful site installation of the Transceiver Replacement Project equipment.

(8) Provide the site manager with periodic status and progress reports on the installation, checkout, and location placement of the Transceiver Replacement Project equipment.

(9) Develop and maintain site specific implementation schedules by coordinating with the site manager.

(10) Coordinate acceptance testing of the Transceiver Replacement Project equipment/installation at the site with the AF Sector, the ARTCC, the contractor and Air Traffic.

51. **PROJECT CONTACTS.**

a. **FAA Headquarters Staff.**

(1) Program Manager for Air/Ground Communications and Control Program, ANC-300.

(2) Deputy Program Manager for Air/Ground Communications and Control Program, ANC-301.

(3) Business Manager, Air/Ground Communications and Control Program, ANC-302.

(4) Air/Ground Communications and Control Division, ANC-700.

(5) Associate Program Manager of Engineering for the Transceiver Replacement Project (TRP), ANC-700.

(6) Implementation Project Engineer for TRP, ANC-700.

(7) Associate Program Manager for Contracts, ASU-330.

(8) Associate Program Manager for Logistics, ANS-420.

(9) Associate Program Manager for Quality, ASU-420.

(10) Associate Program Manager of Testing for TRP, ACW-300.

ASE-200. (11) Associate Program Manager of System Engineering,

b. Regional Associate Program Managers.

- (1) Alaskan Region, AAL-420.
- (2) Central Region, ACE-420.
- (3) Eastern Region, AEA-420.
- (4) Great Lakes Region, AGL-420.
- (5) New England Region, ANE-420.
- (6) Northwest Region, ANM-420.
- (7) Southern Region, ASO-420.
- (8) Southwest Region, ASW-420.
- (9) Western Pacific Region, AWP-420.

c. FAA Organization Support.

- (1) FAA Technical Center (ACT), ACW-400.
- (2) Mike Monroney Aeronautical Center (AMC), AOS-240.
- (3) FAA Logistics Center, AML-1.

52. **PROJECT COORDINATION.** In addition to the project management organization described in paragraph 50, the coordination and active support of a number of other FAA organizations will be of great importance to the successful implementation of the Transceiver Replacement Project equipment.

a. FAA Washington Headquarters. Listed below are headquarters organizations supporting the implementation of the Transceiver Replacement Project.

- ASE-100 NAS System Engineering Service, Automation System Engineering Division.
- ASE-200 NAS System Engineering Service, Communications Division.
- ASU-100 Contracting & Quality Assurance, Management, Policies and Plans Division.
- ASU-300 Contracting & Quality Assurance, Contracts Division.
- ASU-400 Contracting & Quality Assurance, Industrial Division.

- ASM-120 Systems Maintenance Service, Technical Standards Branch.
- ASM-200 Systems Maintenance Service, Maintenance Operations Division.
- ASM-300 Systems Maintenance Service, Telecommunications Management and Operations Division.
- AHT-400 Office of Training and Higher Education, Airway Facilities Training Program Division.
- ASM-500 Spectrum Engineering Division.
- ATQ-1 Office of Independent Operational Test and Evaluation Oversight.

b. FAA Technical Center. ACW-300 serves as the lead for FAA testing and the development of a Test and Evaluation Master Plan (TEMP). They will support the implementation as follows:

- (1) Develop FAA test plan and assist in conducting acceptance testing.
- (2) Provide technical support to ANC-700 throughout the Transceiver Replacement Project implementation.
- (3) Monitor contractor factory and site acceptance testing.
- (4) Support National Airway System Engineering Division (AOS-200) in shakedown testing.
- (5) Develop the TEMP in coordination with ANC-700 and AOS-200.
- (6) Coordinate testing with the contractor, AOS-200, and ANC-700.

c. Mike Monroney Aeronautical Center. The FAALC (AML-400), FAA Academy (AMA-900), and Systems Maintenance Service, National Field Support Division (AOS-200), will support the Transceiver Replacement Project implementation. Responsibilities are to:

- (1) FAALC (AML-400).
 - (a) Provide logistics support service and planning and accomplish cataloging and provisioning for the Transceiver Replacement Project equipment.
 - (b) Conduct a provisioning conference.
 - (c) Participate in the development of logistics policies and plans for support of the Transceiver Replacement Project equipment.

(d) Plan activities for the transition of the Transceiver Replacement Project equipment into the logistics inventory.

(e) Provide equipment exchange and coordinate repair support for the Transceiver Replacement Project equipment after deployment.

(2) FAA Academy (AMA-900).

(a) Monitor contractor development of Transceiver Replacement Project equipment training program.

(b) Monitor training conducted by the contractor.

(c) Develop FAA training programs for the operation and maintenance of Transceiver Replacement Project equipment.

(3) Systems Maintenance Service, Field Support Division (AOS-200).

(a) Develop shakedown test plan and conduct shakedown test following Government acceptance of Transceiver Replacement Project equipment.

(b) Provide second-level engineering support of Transceiver Replacement Project equipment restoration.

(c) Provide configuration management of hardware and technical instructional book after Government acceptance of the Transceiver Replacement Project equipment.

53. **PROJECT RESPONSIBILITY MATRIX.** Figure 5-1, Project Responsibility Matrix, shows the organizational responsibilities and significant actions to be performed during the Transceiver Replacement Project equipment implementation.

54. **PROJECT MANAGERIAL COMMUNICATIONS.** The Transceiver Replacement Project Program Office will manage the project using the established communications channels (written and oral) between the program manager and the contracting officer and between the contracting officer and the contractor.

55. **IMPLEMENTATION STAFFING.** Systems Maintenance Service, Maintenance Operations Division, Operations Program Branch (ASM-260) is responsible for providing staffing standards, however, there are no unique or peculiar staffing requirements associated with the Transceiver Replacement Project. Organizations with assigned responsibilities are expected to accomplish their tasks with existing resources. The contractor will provide depot-level maintenance for the life of the contract.

56. **PLANS AND REPORTS.** The following documents are required during the acquisition, testing, and implementation of the Transceiver Replacement Project equipment.

a. Contractor Documentation Delivered With Proposal. The Transceiver Replacement Project vendors will submit the following documents with the proposal:

- (1) Program Management Plan.
- (2) Configuration Management Plan.
- (3) Quality Control Program Plan.
- (4) Contractor's Test Documentation.
- (5) Contractor Repair Service Plan.
- (6) Technical Instruction Books.
- (7) Training Plan.
- (8) Integrated Support Plan.
- (9) Logistic Support Analysis (LSA) Plan.

b. Contractor Documentation. Documentation will be delivered after contract award. The Transceiver Replacement Project contractor may submit the following Contract Data Requirements Lists (CDRL) items in accordance with the final negotiated schedule and distribution:

- (1) Agendas.
- (2) Minutes.
- (3) Configuration Status Accounting Reports.
- (4) Logistics Support Analysis Plan Updates.
- (5) Repair Level Analysis Report.
- (6) Reliability Allocation Figures.
- (7) Post Production Support Plan.
- (8) Contractor Repair Service Test Procedures.
- (9) Quarterly Repair Service Status Reports.
- (11) Reprocurement Data Package.

- (12) LSA Parts Master File and Incremental Delivery.
- (13) Supplementary Provisioning Technical Data.
- (14) Technical Instruction Books.
- (15) Task Analysis Reports.
- (16) Training Development Plans.
- (17) Course Design Guides.
- (18) Student Achievement Tests.
- (19) Student Course Materials.
- (20) Instructor Course Materials.

c. FAA Implementation Plans and Reports. The Transceiver Replacement Project implementation activities will be documented in the plans and reports listed below:

<u>FAA Documentation</u>	<u>Lead</u>
TEMP	ACW-300/ANC-130
Integrated Logistics Support Plan	ANS-420
DRR Report	ANC-130/AAF-11
Integration and Test Plan	ACW-300
Shakedown Test Plan	AOS-200

57. APPLICABLE DOCUMENTS. The following documents have been referenced, and the current version of these documents are applicable to the implementation of the Transceiver Replacement Project:

<u>DOCUMENT</u>	<u>TITLE</u>
FAA-E-2868A	Specification for the Portable Transceiver
FAA-STD-021	Configuration Management (Contractor Requirements)
FAA-STD-024	Preparation of Test and Evaluation Plans and Test Procedures
FAA-STD-028A	Contract Training Programs
FAA-STD-036	Preparation of Project Implementation Plans

Order 1100.157	National Engineering Field Support Division Maintenance Program Procedures
Order 1320.1	FAA Directives System
Order 1320.48	Engineering Field Support Sector Maintenance Program Procedures-National Airway Engineering Field Support Sector, ASM-150
Order 1800	NAS Program Development Readiness Review
Order 1800.8	National Airspace System Configuration Management
Order 1800.58	NAILS Policy
Order 1810.4	NAS Test and Evaluation Program
Order 6030.45	Facility Reference Data File
Order 6510.4A	Radio Communication Requirements for ATC Facilities
FAA-D-2494/b	Technical Instructional Book Manuscript; Electronic, Electrical, and Mechanical Equipment, Requirements for Preparation of Manuscripts and Production of Books; Appendix I, Commercial Instruction Books
MIL-STD-1388-1A	Logistic Support Analysis
MIL-STD-1388-2B	DOD Requirements For a Logistics Support Analysis Record

58.-59 **RESERVED.**

FIGURE 5-1
PROJECT RESPONSIBILITY MATRIX

Activity	Action	ANC-700	Contr.	AOS-200	ASM-500	ACW-300	AML-400	AMA-900	RAPM
Equipment	Provide		X						
	Receive						X		X
	Install								X
Provisioning Technical Documentation	Provide		X						
	Review	X		X	X		X		
	Receive Distribute						X X X		
Integration Testing	Plan	X		X	X	X			
	Conduct					X			
Shakedown Testing	Plan	X		X	X				X
	Conduct			X					X
Configuration Management	Plan	X	X	X	X				
	Conduct		X	X	X				
Logistics Support	Plan	X					X		
	Conduct						X		
Training	Plan	X	X					X	X
	Conduct		X					X	
Maintenance	Site		X						
	Depot	X					X		
Facility/System Acceptance	Plan								X
	Conduct								X

ANC-700 = Air/Ground Communications & Control
 AOS-200 = Systems Maintenance Service
 ACW-300 = Engineering, Test and Evaluation Service
 AML-400 = FAA Logistics Center
 AMA-900 = FAA Academy

CHAPTER 6. PROJECT FUNDING

60. **PROJECT FUNDING STATUS, GENERAL.** The "CIP Totals" are indicated below. "TRP Totals" reflects an Independent Government Cost Estimate of the requirements.

(\$M/FY)	<u>PRIOR</u>	<u>94</u>	<u>95</u>	<u>96</u>	<u>97</u>	<u>98</u>	<u>99</u>	<u>TOTAL</u>
CIP								
Totals	0.0	3.0	3.0	14.2	21.06	5.4	5.0	63.6
TRP								
Totals	0.0	0.0	8.5	8.9	9.2	9.7	11.6	47.9

61.-69. **RESERVED.**

CHAPTER 7. DEPLOYMENT

70. **GENERAL DEPLOYMENT ASPECTS.** The Associate Administrator for Airway Facilities, AAF-1, is responsible for the Transceiver Replacement Project deployment determination. The deployment determination will be based on an FAA assessment of the extent to which the Transceiver Replacement Project equipment is ready to be successfully integrated into the NAS and the extent to which the FAA infrastructure is prepared to accept, operate, and support the deployed equipment throughout its life cycle. The requirements for this assessment are established in Order 1800, NAS Program Deployment Readiness Review (DRR) Process. The general aspects and schedule for the Transceiver Replacement Project DRR process are as follows:

a. The DRR process outlines the general process by which the Transceiver Replacement APME (ANC-700) conducts an FAA review to ensure that the Transceiver Replacement Project equipment is ready to be integrated into the NAS and that the FAA is ready to receive, operate, and provide life-cycle support to the Transceiver Replacement Project equipment when deployed. Two key DRR milestones are:

(1) Initiation of the DRR Process. The program management office will initiate an internal review of the DRR status upon release of the solicitation. The APME (ANC-700) and the DRR Program Manager (AAF-11) will assemble the project DRR team in accordance with Order 1800. Participants for this team are described in the order.

(2) Submission of the DRR Report and Briefing. After completion of shakedown testing, the APME (ANC-700) will submit a DRR report to the Associate Administrator for Airway Facilities (AAF-1).

b. The DRR team will identify issues/concerns requiring action prior to equipment deployment. All open actions will be addressed in the DRR Report to AAF-1. A detailed DRR checklist, as defined in Order 1800, will be used by the DRR team to ensure that all significant areas of concern are identified during the review. The checklist will address:

- (1) NAS System Requirements.
- (2) Contract Status.
- (3) Project Implementation.
- (4) Facility/Site Preparedness.

- (5) Telecommunication.
- (6) NAILS.
- (7) Training/Certification.
- (8) Software Support.
- (9) Staffing.
- (10) Quality Assurance.
- (11) Configuration Management.
- (12) Test Program.
- (13) Security.
- (14) Human Factors.
- (15) Other Coordination.

c. The Associate Administrator for Airway Facilities (AAF-1) will chair the DRR Executive Committee Meeting that will propose a Transceiver Replacement Project equipment deployment determination to be recommended to the Associate Administrator for Airway Facilities (AAF-1) for approval. The process and participants for this meeting are described in Order 1800.

d. The DRR schedule is as follows:

<u>DRR ACTION</u>	<u>DATE</u>
Initial DRR Review by Support Contractor	12/26/92
DRR Team Announcement	06/02/94
Initial DRR Team Meeting	07/06/94
Implement Action Plans/Close Open Issues	07/11/94
Distribute Action Item Updates	Bimonthly
Distribute Draft DRR Report	11/17/94
Perform Team Review	11/17/94
Perform Cluster Manager Review	11/20/94
Perform Service Director Review	11/22/94
Submit DRR Report to AAF-1	11/24/94
DRR Briefing to AAF-1	12/04/94
DRR Report Approved	12/06/94
Convene DRR Executive Committee	12/09/94
Close out Deployment Critical Issues	12/13/94
Submit Deployment Memorandum to AAF-1	12/15/94
Deployment Determination Approved	01/05/95

71. **SITE PREPARATION.** The site preparation activities will be completed by the Airway Facilities technicians. Limited funding may be available for installation.

72. **DELIVERY.** The Transceiver Replacement Project equipment will be delivered in response to separate delivery orders issued by the FAA contracting officer. These orders will be issued for equipment to fill requirements assigned by ANC-300. The Transceiver Replacement Project contractor is required to deliver equipment/services within 90 days of receipt of a delivery order. Delivery orders may be written for equipment, maintenance, training, and/or other support services. Site installation is not part of the contract. Airway Facilities personnel will provide for all site installation.

73.-79. **RESERVED.**

CHAPTER 8. VERIFICATION

80. **REQUIREMENTS VERIFICATION.** The Transceiver Replacement Project equipment vendor is required to meet the requirements of the contract by submittal of their test documentation. The vendor will submit a matrix illustrating cross matching of information between their proposed equipment and the requirements of the contract. An operational capabilities test is also planned prior to contract award to ensure that the requirements are met.

81. **OPERATIONAL TEST AND EVALUATION.** The Transceiver Replacement Project equipment is NDI equipment; therefore, limited operational test and evaluation (OT&E) is required for this procurement. OT&E shakedown testing will be done at the first site.

82. **CONTRACTOR INTEGRATION TESTING.** Contractor integration testing (CIT) is not required for this procurement.

83. **CONTRACTOR ACCEPTANCE INSPECTION.** A contractor acceptance inspection (CAI) is not required for this procurement.

84. **ACCEPTANCE INSPECTION.** An acceptance inspection is required for this procurement.

85.-89. **RESERVED.**

CHAPTER 9. INTEGRATED LOGISTIC SUPPORT

90. MAINTENANCE CONCEPT.

a. General. The maintenance planning organization (ASM-120) is the primary interface point for system support. The Transceiver Replacement APME (ANC-700) will coordinate the NAS Integrated Logistics Support Plan (ILSP) for the Transceiver Replacement Project equipment with APML (ANS-420) to ensure that all logistics factors are considered.

b. Corrective Maintenance. The AF personnel will provide on-site maintenance and repair Transceiver Replacement Project equipment to the line replaceable unit (LRU) level only. The contractor will provide the depot-level maintenance support package for the Transceiver Replacement Project equipment. Maintenance will be provided by the contractor at a contractor facility.

(1) Field Level Maintenance. The FAA will provide corrective maintenance on all Transceiver Replacement Project equipment. AF will determine which LRU requires corrective maintenance, replace it with a spare unit, and send the defective LRU to the FAALC for repair. The AF personnel will perform preventive maintenance on all equipment.

(2) Depot-Level Maintenance. The contractor will provide depot level corrective maintenance for Transceiver Replacement Project equipment not receiving on-site corrective maintenance, as ordered by the Government. This includes routine repair within 30 days after receipt of an unserviceable item and emergency repair within 48 hours. The FAALC will act as an exchange point for defective equipment between the operational site and the contractor's maintenance depot. The FAALC will monitor the contractor depot level maintenance.

(3) Contract Period. The period of performance for the contract is 5 years.

c. Preventive Maintenance. Preventive maintenance will occur at the operational facility and should be in accordance with the contractor's recommended preventive maintenance schedule. The AF personnel should coordinate with the facility at least 24 hours in advance of commencement of preventive maintenance activities.

d. FAA Requirements

(1) Field Level Maintenance. The AF personnel will provide field level corrective maintenance on all Transceiver Replacement Project equipment. AF personnel will determine which LRU requires corrective maintenance, replace it with a spare unit, and send the defective LRU to the FAALC for repair.

(2) FAALC Requirements. The contractor will perform equipment maintenance during the life of the contract. While the contractor is performing the maintenance, ANC-700 will order the spare equipments, LRU's, and parts to be placed in the FAALC according to the provisioning parts list. The FAALC will operate in an exchange mode for Transceiver Replacement Project, equipment. The operational site will send defective LRUs to the FAALC. The FAALC will send spare LRU's to the operational sites, send the defective LRU's to the contractor depot, and coordinate all repair effort.

When adequate spares and trained technicians are available, the FAALC will make the decision to accept maintenance responsibilities or allow the contractor to continue depot maintenance activities.

(3) FAA Site Requirements. The AF personnel will be required to perform preventive maintenance and to provide corrective maintenance to the LRU level. FAA site personnel will also be required to test, remove, and ship defective equipment to, or as directed by, the FAALC for shipment to the vendor.

e. Second Level Support.

(1) Contractor. The Transceiver Replacement Project contractor will provide assistance to solve site-unique problems by providing direct support to Transceiver Replacement Project equipment sites via a telephone advisory service or on-site technical assistance visits when required. When technical assistance is provided to FAA technicians, the contractor will provide all required test equipment and diagnostics software.

(2) FAA. System-wide problems will be addressed within AOS-200 which will have the capability to recommend modifying, hardware, firmware, documentation, and handbooks. Support to AOS-200 also will be provided by the contractor via a telephone advisory service and on-site technical assistance.

91. TRAINING.

a. General. Offerors will submit a commercial training program with their proposals. The FAA Academy will evaluate the training program and determine whether to use the contractor training or order the contractor to develop course materials for the FAA or provide the training. The training program will be for FAA personnel engaged in management, operations, hardware maintenance training operations, and maintenance. The training program will be in accordance with FAA-STD-028A, (Contract Training Programs).

b. Training Courses. The Transceiver Replacement Project contractor may provide the following training courses:

(1) Correspondence Course. As determined by the Government, the contractor will provide training course materials for the operation/maintenance of Transceiver Replacement Project equipment. Training will include maintenance to the LRU level.

(2) Hardware Maintenance Course. As determined by the Government, the contractor will provide hardware maintenance course materials.

(3) Depot Level Training and Materials. As determined by the Government, the Contractor will provide depot-level training and materials.

(4) Vendor Certification. The students who complete the operations/maintenance training courses shall be certified as vendor qualified and shall be able to:

(a) Perform equipment power-up, power-down, start-up, start-over, recovery, and change of operational modes.

(b) Locate and identify all assemblies and subassemblies.

(c) Analyze and identify problems by interpreting results of functional and diagnostics tests.

(d) Use functional and flow diagrams and test equipment, as required, to locate malfunctions to the appropriate LRU.

(e) Perform periodic maintenance as required.

(f) Remove and replace faulty LRU's.

c. Attrition Training. The FAA Academy will develop a plan for attrition training using contractor provided documentation.

d. FAA Training Program. AHT-300 will initiate action to implement the FAA follow-on training program for Transceiver Replacement Project equipment.

92. **SPECIAL TOOLS AND TEST EQUIPMENT**. Special tools, test/support equipment and/or interface devices required to support the Transceiver Replacement Project equipment will be held to a minimum. The vendor will identify in their provisioning technical documentation all common tools, test/support equipment, interface devices and connectors needed to maintain the equipment.

93. **SUPPLY SUPPORT.** The Transceiver Replacement Project contractor will provide spares for initial provisioning, as ordered by the Government, after the provisioning conference. The type and number of spares ordered will be based on an analysis of the provisioning technical documentation (PTD) provided by the contractor and verified in the data records. Common parts will be identified in the PTD, but will be procured separately by the FAALC and provided to the appropriate storage locations in accordance with established FAA supply procedures. There will be three supply support levels as identified below:

(1) **Operating Site/Work Center.** Requirements for site/work center spares of LRU's will be based on the Transceiver Replacement Project provisioning conference.

(2) **FAALC.** No piece parts repairs will be conducted at the FAALC. The FAALC, assisted by ANC-700, will prepare an Initial Supply Support Allowance Chart for work centers identifying the LRU's to be provided from the Transceiver Replacement Project procurement. The FAALC will act as an exchange point for defective LRU's between the FAA site and the contractor's maintenance depot.

(3) **Contractor Depot.** The contractor depot will maintain a "supply level" and provide a source of "safety stock" as determined during the Transceiver Replacement Project provisioning conference. Safety stocks will be maintained for parts not expected to fail frequently but are critical in avoiding long maintenance downtimes.

94. **VENDOR DATA AND TECHNICAL MANUALS.** The Transceiver Replacement Project contractor will be responsible for developing and providing the following:

a. **Provisioning Technical Data.** The contractor will establish and maintain a Logistics Support Analysis (LSA) program in accordance with MIL-STD-1388-1A and MIL-STD-1388-2B. The LSA program will support the accomplishment of LSA program tasks. The data and information generated from the LSA will be recorded and stored to the contractor-established and maintained automated LSA Record (LSAR) system. The contractor will plan for and provide FAA a Parts Master File. The contractor will conduct a provisioning conference to identify the recommended provisioning parts and quantities. The contractor will provide: (1) the provisioning parts list, (2) failure data, (3) drawings, and (4) samples of equipment, assemblies, and replaceable parts.

b. **Technical Manuals.** The bidders will provide commercially available manuals to be evaluated against requirements defined in FAA-D-2494/b as part of their proposals.

95. **EQUIPMENT REMOVAL.** The Transceiver Replacement Project equipment will replace some older items. Any equipment removed will be disposed of in accordance with Order 4800.6 and the ILSP.

96. **FACILITIES.** The Transceiver Replacement Project equipment will be configured to fit within existing space allocated at the FAA facilities. Specific space requirements for equipment have been identified in Section 32. No special responsibilities have been assigned to the Government for designing, developing, or acquiring support facilities.

97.-99. **RESERVED.**

CHAPTER 10. ADDITIONAL PROJECT IMPLEMENTATION ASPECTS**100. CONFIGURATION MANAGEMENT.**

a. Acquisition Configuration Management. Offerors will prepare and submit a Configuration Management Plan with their proposals. The plans will describe the contractor's procedures for baseline identification and control and procedures for the implementation and control of equipment upgrades. Of particular importance is the upward and downward compatibility of new revision levels.

b. Implementation Configuration Control.

(1) AOS-200 will assume the responsibility for maintaining the operational configuration per Order 1100.157. Guidance and procedures in Order 1800.8 will be followed to ensure a smooth and efficient transfer between the project office and the System Maintenance office.

(2) ANC-700 and AOS-200 will develop a handoff agreement concerning the configuration management transition. This agreement will be added in the future as an addendum to this PIP.

101-109. RESERVED.

